CLAIMS

What is claimed is:

1. A method for providing trick mode functionality, comprising:

    (a) storing a video stream containing dependent frames in memory;

    (b) storing information related to the video stream in memory;

    (c) receiving a request for a trick mode operation;

    (d) responsive to receiving the request for a trick mode operation, decoding a plurality of undecoded dependent frames corresponding to the video stream to create a decoded frame; and

    (e) outputting the decoded frame.

2. The method of claim 1, further comprising repeating steps (d) and (e) until the trick mode operation is cancelled.

3. The method of claim 1, further comprising determining whether the video stream includes independent frames.

4. The method of claim 1, wherein the video stream does not include independent frames.

5. The method of claim 4, wherein an independent frame is a frame that is coded using information only from itself.

6. The method of claim 4, wherein an independent frame is an I-frame.

7. The method of claim 1, wherein a dependent frame is a frame that is coded using information contained in another frame

8. The method of claim 1, wherein the undecoded dependent frames are P-frames.

9.   The method of claim 1, wherein the video stream is received from a headend.

10.   The method of claim 1, wherein the memory is a non-volatile memory.

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11.   The method of claim 1, wherein the related information comprises an index table.

12.   The method of claim 11, wherein the index table identifies storage locations of respective sequence headers.

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13.   The method of claim 11, wherein the index table identifies storage locations of respective frame start codes.

14.   The method of claim 11, wherein the index table identifies frame types.

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15.   The method of claim 11, wherein the index table identifies times of when respective frames were stored.

16.   The method of claim 1, wherein the related information identifies whether the video stream contains I-frames.

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17.   The method of claim 1, wherein the related information comprises Packet identification codes (PIDs).

25   18.   The method of claim 1, wherein the plurality of sequential undecoded dependent frames are determined based at least in part on a type of the video stream.

19.   The method of claim 1, wherein the decoded frame is output a plurality of times.

20. The method of claim 19, wherein the plurality of times that the decoded frame is output is determined based at least in part on an output picture rate.

21. The method of claim 19, wherein the plurality of times that the decoded frame is output is determined based at least in part on a speed of the trick mode operation.

22. The method of claim 19, wherein the plurality of times that the decoded frame is output is determined based at least in part on a ratio of P-frames to B-frames in the video stream.

23. The method of claim 19, wherein the plurality of times that the decoded frame is output is determined based at least in part on the plurality of sequential undecoded dependent frames.

24. The method of claim 1, wherein the trick mode operation is a fast play mode.

25. The method of claim 1, wherein the trick mode operation is a rewind mode.

26. The method of claim 1, wherein a first tuner receives an analog video signal corresponding to a first video stream and a second tuner simultaneously receives a digital compressed stream corresponding to a second video stream; wherein the first video stream and the second video stream are annotated to facilitate future retrieval from memory; wherein the first video stream and the second video stream are stored in memory; and wherein at least one of the first video stream and the second video stream is output to a display device.

27. The method of claim 1, wherein an entry point for a trick mode operation is specified based on an elapsed normal playback time and/or a number of frames relative to a beginning of the video stream.

28. The method of claim 1, wherein in response to the request, a processor reads information in an index table, retrieves annotation data that correspond to the video stream, and determines an entry point for fulfilling the trick mode request.

5 29. A system for providing trick mode functionality, comprising:

memory for storing a video stream and information related to the video stream;

determination logic configured to determine whether a request for a trick mode operation has been received in connection with the video stream; and

decoding logic configured to decode a plurality of undecoded dependent frames corresponding to the video stream responsive to the determination logic determining that the request for the trick mode operation has been received; and

output logic configured to output a decoded frame, wherein the decoded frame is created as a result of the decoding logic decoding the plurality of undecoded dependent frames.

30. The system of claim 29, wherein the related information comprises an index table.

31. The system of claim 30, wherein the index table identifies storage locations of respective sequence headers.

32. The system of claim 30, wherein the index table identifies storage locations of respective frame start codes.

33. The system of claim 30, wherein the index table identifies frame types.

34. The system of claim 30, wherein the index table identifies times of when respective frames were stored.

35.   The system of claim 29, wherein the related information identifies whether the video stream contains I-frames.

36.   The system of claim 29, wherein the related information comprises Packet identification codes (PIDs).

37.   The system of claim 29, wherein the plurality of undecoded dependent frames are determined based at least in part on a type of the video stream.

38.   The system of claim 29, wherein a number of times that the decoded frame is output is determined based at least in part on an output picture rate.

39.   The system of claim 29, wherein a number of times that the decoded frame is output is determined based at least in part on a speed of the trick mode operation.

40.   The system of claim 29, wherein a number of times that the decoded frame is output is determined based at least in part on a ratio of P-frames to B-frames in the video stream.

41.   The system of claim 29, wherein a number of times that the decoded frame is output is determined based at least in part on the plurality of undecoded dependent frames.

42.   The system of claim 29, wherein the trick mode operation is a fast play mode.

43.   The system of claim 29, wherein the trick mode operation is a rewind mode.

44.   The system of claim 29, wherein a first tuner receives an analog video signal corresponding to a first video stream and a second tuner simultaneously receives a digital compressed stream corresponding to a second video stream; wherein the first video stream and the second video stream are annotated to facilitate future retrieval from

memory; wherein the first video stream and the second video stream are stored in memory; and wherein at least one of the first video stream and the second video stream is output to a display device.

5   45.   The system of claim 29, wherein an entry point for a trick mode operation is specified based on an elapsed normal playback time and/or a number of frames relative to a beginning of the video stream.

46.   The system of claim 29, wherein in response to the request, a processor reads information in an index table, retrieves annotation data that correspond to the video stream, and determines an entry point for fulfilling the trick mode request.

47.   A method for providing trick mode functionality, comprising:

receiving a video stream that does not include I-frames;

storing the video stream in memory;

storing information related to the video stream in memory;

receiving a request for a trick mode operation;

decoding a plurality of undecoded dependent frames corresponding to the video stream to create a decoded frame;

outputting the decoded frame a plurality of times;

repeating the decoding and the outputting until the trick mode operation is cancelled;

wherein the related information comprises an index table;

wherein the index table identifies storage locations of respective sequence headers;

wherein the index table identifies storage locations of respective frame start codes;

wherein the index table identifies frame types;

wherein the index table identifies times of when respective frames were stored;

wherein the related information identifies whether the video stream contains I-frames;

wherein the related information comprises Packet identification codes (PIDs);

wherein the plurality of sequential undecoded dependent frames are determined based at least in part on a type of the video stream;

wherein the plurality of times that the decoded frame is output is determined based at least in part on an output picture rate;

wherein the plurality of times that the decoded frame is output is determined based at least in part on a speed of the trick mode operation;

wherein the plurality of times that the decoded frame is output is determined based at least in part on a ratio of P-frames to B-frames in the video stream; and

wherein the plurality of times that the decoded frame is output is determined based at least in part on the plurality of sequential undecoded dependent frames.

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